WR 525 ADVANCED SCIENTIFIC AND TECHNICAL WRITING
4 Credits: 4 hours (Ecampus)
This course combines approximately 120 hours of instruction, online activities, and assignments for 4 credits.
Cross listed with PSM 525 as part of the Professional Science Master’s and Graduate Certificate in Management for Science Professionals programs.

INSTRUCTOR:
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COURSE DESCRIPTION:
Advanced Scientific and Technical Writing combines scientific and technical writing with science journalism. Students will draw on a data set (preferably their own) to draft a scientific journal article, short grant proposal, magazine article, and letter of inquiry. They will also critically evaluate and edit documents by reviewing classmates’ drafts.

REQUIRED TEXTS:
Style manual for the individual student’s discipline. (Students will be encouraged to seek advice of a mentor or use a manual specified in the selected outlet.)

——. 2009. Elizabeth Kolbert, ed; Tim Folger, series ed. ISBN: 0-547-00259-0 (pbk.)
——. 2010. Freeman Dyson, ed; Tim Folger, series ed. ISBN: 0-547-32784-6 (pbk.)

SUGGESTED TEXTS:
Franklin, Jon. 1997. The end of science writing: The Alfred and Julia Hill Lecture. University of Tennessee. March 17, 1997. Copyright 1997 by Jon Franklin. jonfrank@pioneer.net. (Permission needs to be obtained.)

Tufte, Edward R. (http://www.edwardtufte.com/tufte/)
——. 2001. The visual display of scientific information. 2nd ed. Cheshire, CT: Graphics Press LLC.

ADDITIONAL RESOURCES:
Board of Editors in the Life Sciences resources at http://www.bels.org/relatedresources.htm.
Society for Technical Communication resources at http://www.stc.org/about/.

LEARNING GOALS:
1. Each student will learn the tools to use and the process to follow to communicate scientific results to their peers in a scientific journal article and to the general public in a magazine article.
2. Each student will learn to judge the competence of their own and their peers' writing by editing and reviewing it according to professional writing standards and guidelines.
3. Each student will understand what it means to write to specific audiences and how they constitute writing communities.

LEARNING OUTCOMES
By the completion of this course, each student will be able to:
1. Analyze guidelines and audiences to write a proposal, a magazine article, and a scientific journal article.
2. Determine and select the appropriate visual display to present the data set.
3. Interpret then write about data and results within a scientific journal article and a magazine article.
4. Employ critical thinking to revise or edit a scientific journal article or a science magazine article using a standard or guidelines.
5. Apply rhetorical concepts and techniques to analyze a collection of science writing and scientific journal articles then incorporate those principles while writing a book review.
6. Use persuasion effectively to write a proposal and a submission or query letter.
EVALUATION OF STUDENT PERFORMANCE:

- Peer review of draft sections according to guidelines supplied by instructor
- Peer editing of book review
- Instructor review of final papers (grant proposal, journal article, submission letters, book/article review, magazine article)

ASSIGNMENT OVERVIEW

- Scientific journal article 35%
- Short Grant Proposal 20%
- Magazine Article 25%
- Letter of Inquiry 10%
- Book/Article Review 10%
- TOTAL 100%

Special note: Students will need to write informally and frequently in writing groups as well as to me and to outside sources. This writing will not be graded because it will vary in quantity and quality for each student. This is the student’s opportunity to write as much and as frequently as required to complete each of the assignments. For example, the scientific journal article will be broken into subsections to be written then reviewed and edited by other student peers before final submission for grading.

COURSE POLICIES

Submitting Assignments: All work must be completed and submitted on time.

Expectations for Student Conduct: See the explanations on OSU’s webpage:
http://oregonstate.edu/admin/stucon/achon.htm and
http://oregonstate.edu/studentconduct/regulations/index.php#acdis

Statement Regarding Students with Disabilities: Accommodations are collaborative efforts between students, faculty and Disability Access Services (DAS). Students with accommodations approved through DAS are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through DAS should contact DAS immediately at 541-737-4098.

SAMPLE COURSE SCHEDULE:

Week 1-2: The scientific method: when, what to write, and where to publish
- Comparisons of scientific and technical writing by purposes Requests for Proposals (RFP) and Proposals: Grant writing
- Assignment: Write a proposal using the NSF grant writing guidelines; RFP to be determined

Week 3-5: Types of scientific writing and reading
- Communities, disciplines, audiences; guidelines and standards
- Forms and their purposes
- Writing the journal article, letters
- Peer review
- Journal publication, paper and electronic
- The knowledge base, archiving, access, attribution
• Integrity in scientific research and publishing
• Ethical responsibilities of editors and contributors in scientific publishing
• Career paths
• Assignment: Write the bibliography, introduction, study design sections; discover author guidelines for selected outlet; compose a letter of inquiry or submission to the outlet

Week 6-7: Advanced technical writing
• Audiences, purposes, and types of tech writing, abstracts
• Visuals for scientific information: images, tables, figures
• Budgets and balance sheets in grant proposals
• Preparing the poster or writing the technical report using students’ work
• Technical editing: copyediting
• Business writing basics
• Career paths
• Assignment: Write materials and methods, results, and discussion sections; write the title, abstract and assign keywords Draft papers will be exchanged and edited by partner students and returned with a 1-2 page letter of peer review.

Week 8-9: Science journalism (“science writing”)
• Read one volume then write a review of one article in the “Best American Science Writing” series to analyze and discuss science writing
• Review scientist interaction with the media
• Interviewer v. interviewee: chains of evidence
• Writing about your research or discoveries for a public audience
• Appropriate advocacy and public scientific literacy
• Press guidelines and legal constraints: The Associated Press style guides
• Assignment: Write an article that reports on a scientist or your scientific experiment or internship experience for publication in a magazine

Week 10: Summary, presentations, and any revisions of articles due at the end of dead week.
• Final discussion on the future of scientific publication and science journalism.